Language Learning in Virtual World: Integrating Metaverse to Strengthen Skills in National Language a Course

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ABSTRACT

The development of immersive technologies such as metaverse has opened new opportunities for language education in strengthening students to master the four language skills such as listening, speaking, reading, and writing skills. This concept paper will introduce a learning innovation through a metaverse platform, specifically for National Language A course in Private Higher Education Institutions (PHEIs). The innovation through interactive virtual environments with scenario-based learning activities that allow students experience more realistic, and meaningful language contexts. The key features of this innovation include providing collaborative virtual classrooms, simulations of real-world communication scenarios, and opportunities for social interaction through personalized avatars to students' learning process. In addition, the implementation of metaverse technology is expected to yield positive impacts such as enhance language proficiency, communication confidence, and students' digital literacy. This innovation was not only aligned with the objectives of national language education but also strengthens students' 21st-century skills, which enable them to compete and adapt in technology-driven learning and communication environments. Therefore, this project holds the potential to serve as a reference on the idea for integrate immersive technologies in language teaching.

Keywords: Immersive learning, Language skills, Metaverse, National Language A course, Private Higher Education Institutions (PHEIs)

INTRODUCTION

The transformation of education landscape in the era of the Fourth Industrial Revolution (IR 4.0) with the transition towards the Fifth Industrial Revolution (IR 5.0) has introduced a new dimension in teaching and learning (T&L), in where the integration of digital technology is no longer optional but an essential requirement. Immersive technologies such as metaverse platform has introduce as innovative learning platforms with four types; Virtual Reality (VR), Augmented Reality (AR), and mirror worlds or lifelogging that allow users to interact within simulations of real-life settings with different experiences and function (Mystakidis, 2022).

The incorporation of those metaverse technologies in students' learning process has the potential to change their learning modes in the context of language education, particularly for National Language A (Bahasa Kebangsaan A) courses at Private Higher Education Institutions (PHEIs). As well known, this course is compulsory taken by students who did not receive credit in Malay language at the level of Sijil Pelajaran Malaysia (SPM) in higher education, however, this course is also considered a General Subject (Mata Pelajaran Umum- MPU). It was created especially for Malaysian students with the intention to enhance their command of the Malay language and promoting a feeling of patriotism indirectly, also improve students' ability to communicate, comprehend different cultures, and value their national identity.

Furthermore, the conventional teaching methods are primarily relied on lectures, written assignments, and text-based reading that always struggled to meet the needs of today's students, as they are more drawn to interactive, group projects, and visually stimulating approach that meet their learning style. A study by Safaruddin, Salsabila & Juhaeni (2024) on the use of Gather Town platform have demonstrate the interactive approaches can improve students' motivation, cognitive skills, and questioning in ways that can activate their existing knowledge indirectly allow them to integrate it with the new information as they learn.

The integration of metaverse also provide collaborative virtual learning space in where students allow to create

their own avatars, interact in real-life simulations, and practice language skills in more meaningful and contextual settings without fear (Aydın, 2022). The adoption of metaverse platform indirectly supports 21st-century pedagogy that emphasizes on student-centered learning, task-based methods, and authentic assessment. At the same time, it can cultivate students' soft skills as an example communication, critical thinking, creativity, and digital literacy. Therefore, the learning innovation through implementing metaverse platform in the National Language A course represent a strategic step towards strengthening the effectiveness of T&L, while also ensure the course remains relevant within future landscape of higher education.

Problem Statement

The teaching of National Language A course in PHEIs is designed to develop listening, speaking, reading, and writing skills in Malay, particularly among students who did not obtain a credit in Malay Language subject during their SPM examination. However, recent study indicates that traditional approaches that use for language learning facing issues in providing immersive and contextualized learning experiences. Ibrahim, Hui & Ibrahim (2022) examines that many non-native speakers especially Chinese students struggle to grasp Malay grammar structures and vocabulary in their learning process due to classroom activities less of incorporate authentic contexts that allow them to connect language with real-life situations. In addition, although e-learning platforms such as Learning Management Systems (LMS) and communication applications are increasingly used in nowadays, however, most of these tools are confined to two-dimensional (2D) environments that do not fully support interactive, real-time language learning (Lim, Wang & Graham, 2022) when compared to metaverse's 3D environment which simulate real world.

On the other hand, many international studies have highlighted the potential of immersive technologies especially the use of metaverse platform in language education. Mystakidis (2022) argued that 3D environments can boost students' intrinsic motivation and engagement through real-world simulations, while also enable rich form of social interaction through avatar with more meaningful ways. Despite on this, research on the use of metaverse technologies for learning Malay Language at IPTS is limited as most local studies remain focused on STEM subjects or English language education (Pythaverse, 2023; Jaaffar & Adnan, 2023). This gap of language education is significant, especially on current teaching strategies that often lack contextualization, which will effect on students' confidence in using the language- particularly in oral communication as fluency is the essential (Dede, 2009). Moreover, teachers currently are lack with clear and practical guidelines in planning, implementing, and evaluating metaverse-based instruction in language classrooms due to this technology are newly to them.

Therefore, there is a strong need to develop an instructional innovation that systematically integrates metaverse into National Language A course. The implementation of this approach can provide more authentic, interactive, and learner-centered experiences to students and support them in master the language. This paper will also enrich the academic literature by offering empirical evidence on the effectiveness of metaverse technologies in the context of Malay language education at private universities.

Metaverse in Context of Higher Education

In higher education, the emerged of metaverse become one of the key innovations on students' learning and teachers' pedagogy due to its ability in providing immersive, interactive, and realistic learning environments allow students to actively participate. A study by Wei et al. (2025) highlights the integration of virtual environments in higher education could enhances students' cognitive, emotional, and social engagement by creating learning experiences that have the sense of presence and mimic the real-world situations. However, Mystakidis (2022) further emphasizes that the metaverse act as an experiential learning space which allow students to construct knowledge through exploration and interaction in better master the content deliver.

In the global education context, virtual worlds offer opportunities for collaborative learning or teamwork project regardless of time and location, indirectly foster cross-cultural communication that encourage students to explore more and gaining knowledge on different cultural (Van der Meer et al., 2023). Additionally, research by Islam and Wang (2025) found that avatar-based communication in metaverse environment can enhance student engagement and create a stronger sense of presence when compared to conventional learning platforms that more to individually.

However, a study conducted by Hussain, Meehan, and Qadir (2024) identified several obstacles on the adoption of metaverse in T&L process which includes technological advancement, digital literacy among lecturers and students, and preparedness of institutions' infrastructure. As a result, the integration of metaverse in Malaysian's education is still in a new norm and needs more investigation to determine its suitability and efficacy, which benefits academics and the field of education in the future for education benefit.

Metaverse as a Medium for Language Learning

The emergence of metaverse technology in today's educational landscape has been popular as language learning tool due to the potential of it provides an interactive environment letting students practice their language skills in more realistic settings that mimic the real-world environment. This encourage students to interact, communicate, and complete their language tasks together through avatars- persona identities in virtual worlds- helping make learning more contextual and authentic. Research by Chen, Wang, and Wang demonstrates that language learning in VR environments can significantly enhance students' fluency in communication, due to students are given opportunities to apply vocabulary and grammatical structures in simulated situations that allow them to practice their language proficiency. The virtual spaces also be able to reduce students' anxiety and pressure which make them feel more confident in speaking and using the target language in their learning process or applicate in real-life situations.

Next, Kaplan-Rakowski and Gruber (2023) highlight that metaverse platforms such as Second Life help students in learning foreign language build their speaking confidence, and practice or communicate in a risk-free environment where mistakes are less intimidating and without scare of being judges. Similarly, study of Lee (2023) shows the use of metaverse platform can strengthen students' listening skills and comprehension on text through instructions that are more dynamic with audiovisual interactions compared to traditional methods that will decrease students' motivation and focus on T&L process.

When moving in Malaysian context, research on the use of the metaverse in teaching especially for Malay language remains limited, particularly in PHEIs. Based on this gap underscores there is a need for empirical studies to explore how integrating metaverse platform could support students on mastery the four language skills in the National Language A course.

Immersive Technology in Language Education

Immersive technologies such as VR, AR, mirror world or lifelogging platform are gaining increasing attention in language education due to their ability to create deepen, authentic, and sensory learning experiences for students. The use of VR in language learning, help students step into simulated situations that closely mimic real-life contexts that allow experiential learning, which in turn helps them acquire vocabulary, grammar, and oral communication skills in a more contextualized manner (Nordin, 2025). For instance, VR simulation of a night market or a restaurant setting allows students to practice their language skills in an environment that give the sense of similar to the real world which encourage students to communicate and apply the language in real-life later.

Meanwhile, AR platform offers unique opportunities through blending virtual elements with physical environment, as it enables students to grasp language concepts through interactive visualization compared to traditional visual. The study of Syafri and Ramli (2023) highlight the integration of gamification elements into VR-based learning environments are only enhances learners' motivation but also encourages them to practice speaking skills more frequently in meaningful environments.

Potential of Gather Town Platform as a Metaverse

Gather Town is a metaverse platform that allows users to move around and interact within a 2D or 2.5D virtual space. It supports a variety of integrated features, such as interactive whiteboards, private rooms for group discussions, gamification rooms and live video and audio. In this context of language education, Gather Town act as to simulate authentic situations such as conversations in a cafe, meetings, or language games that offer students in more authentic and relevant learning experiences.

A study by Fitria (2021) found that using Gather Town in language teaching helped to increase students' focus

and engagement by giving them the freedom to move around and interact socially in a way that feels more natural compared to conventional video conferencing platforms that used during Covid-19. Moreover, it's also only need low hardware which make it accessible to students from diverse technological backgrounds.

Learning Theories

Immersive Learning Theory emphasizes on students gain deeper understanding when they are actively engaged in environments that mirror real-world settings. This theory has evolved alongside advancements of digital technologies in education as immersive learning provide students a virtual space that allow them to actively participate and socially using their own avatar. So, when metaverse integrate to language learning, immersive environments allow students to practice the four key language skills (Listening, speaking, writing and reading) in meaningful, relevant and authentic contexts.

Meanwhile, Self-Determination Theory (SDT) that introduced by Deci and Ryan (2012) highlights students' intrinsic motivation will increase when they experience autonomy, competence, and meaningful social connections in learning process. The use of metaverse has the potential to fulfil all these elements by providing opportunities for self-directed learning, collaborative activities, and social interactions. Both theories are aligned with a review by Jie & Kamrozzaman (2025a) in using the theories to support the development of metaverse model for National Language A as a pedagogical innovation to support students' language skills.

DISCUSSION

Operational framework

In this manuscript, the main metaverse platform is Gather Town. The operational framework relates to immersive learning theory and SDT with some features as shown in below figure such as collaborative virtual space, gamification and tasks, authentic situation simulation and etc. All these features will operate through a cycle of immersion, interaction, reflection and mastery of the language skills which support by SDT elements (autonomy, efficiency and relatedness). So, this process will lead to improvement in four language skills along with students' digital literacy and confidence in communication. As a result, this framework highlights the impact of metaverse-based learning which strengthen students' language proficiency in National Language A course indirectly also fosters their 21st century skills.

Figure 1: Operationalized theoretical framework
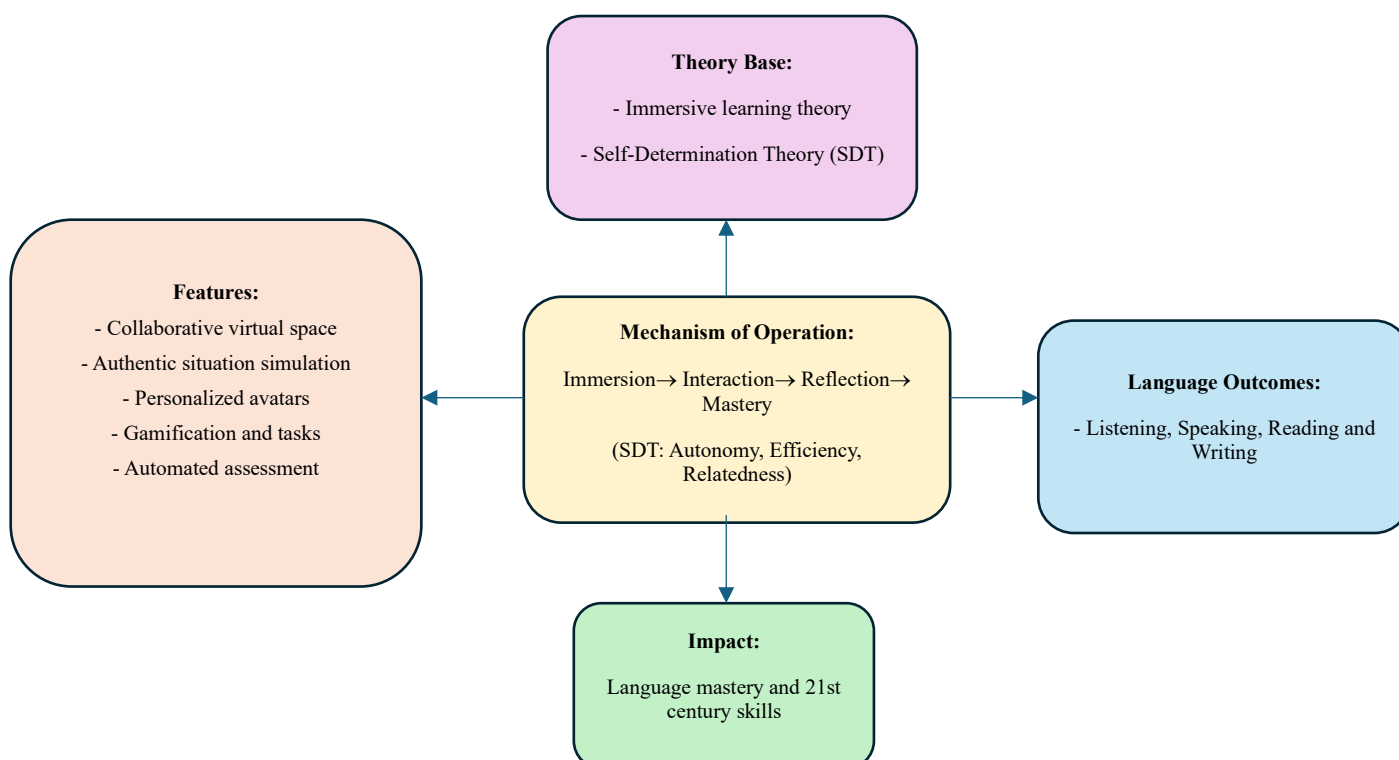
Gather Town as an interactive medium in language learning: How Gather Town support students' language learning

Gather Town as an interactive medium in language learning: How Gather Town support students' language learning Gather Town platform provides a virtual environment that mirrors real-world settings, which allow students to interact directly through their own avatars that have been created. This uniqueness merge physical space elements with digital communication, authentic and relevant learning atmosphere (Jie & Kamrozzaman, 2025b). In the context of teaching National Language A course, students can engage in activities such as group discussions, conversation simulations, and role-play within specific designed virtual rooms- such as classrooms, poster halls, virtual cafes, go kart station and etc. According to Mystakidis (2022), the sense of social presence in immersive environments enhances students' emotional, cognitive, and motivational engagement in the learning process, as it provides a feeling of "being there" which similar to real-life experiences that encourage students to actively participate in their learning process.

Moreover, Gather Town platform also allows lecturers to monitor student interactions in real time and provide immediate feedback to alter students' language skills. This statement aligns with the perspective of Kamaruddin, Bakar, and Aziz (2025), interactive learning supports vocabulary acquisition and builds students' confidence in speaking and engage more. Additionally, this platform also allows the integration of multimodal recourses like documents, videos, interactive whiteboard and etc. This potential can support students' writing skills and reading skills which allow students to access authentic texts, collaborate on the shared writing tasks with groupmates, and receive immediate information and feedback either from peers or educators. Study has indicated that the support of multimodal resources input students' learning experiences can enhance their retention and comprehension on language structures (Rohi & Nurhayati, 2024).

According to all those features and benefits bring by this platform: avatar-based learning, mirrors real-world settings, collaborative learning, social presence multimodal resources and real-time feedback have demonstrated Gather Town serve as a powerful virtual environment that can strengthen students' language skills that require for National language A course. While, the implementation of this platform indirectly also will cultivate students' digital literacy and collaboration skills as both are the essential skills of 21st century language learning. Thus, the platform functions not only as a medium of delivery content or skills but also as allow students to use the language that they mastery into real-life later.

Enchanment of language skills through virtual environments

The integration of Gather Town platform allows students to develop all four language skills within a more authentic learning environment. According to research of Gatanagayan & bte Amzah (2021), emphasize that a virtual setting that enriched with visual, audio and interactive elements can support students to understand and grasp vocabulary and grammar more effectively and engagingly. Simulated virtual environments also enable them to participate in activities such as dialogues, language games, or group discussion in solving problem that closely mirror real-life situations which prepare students for future.

In metaverse environment, students can engage in a virtual marketplace where allow them to practice on using their vocabulary related to buying and selling, which not only enhances communication but also strengthens contextual understanding and check their own proficiency. In addition, the gamification features in Gather Town provide enjoyable practice opportunities for students to master the language. Fang, Kasdan & Mat Noor (2022) highlight that gamification in language learning is able to increases students' motivation and encourages more frequent practice for them without fear and shy, as they will enjoy in the environment. For writing skills, the platform offers an interactive digital whiteboard where students can construct sentences or paragraphs, while reading skills can be fostered through narrative-based texts that provided within the virtual setting.

Challenges and strategies in using Gather Town in National Language A course

Gather Town platform offers a variety of advantages in strengthen language learning, but there are also several challenges that must be considered in its implementation to ensure the smooth of integration. One of the main challenges are the digital literacy levels of both students and lecturers, due to some may struggle to master the platform's functions. Previous study has highlighted when lectures and students have limited digital competence

indirectly will hidden the successful adoption of technology-enhanced learning environment in T&L process (Tabowei, 2021).

Another challenge involves technological infrastructure, such as internet speed and access to devices, which directly affects the smoothness and participation of students in virtual learning. In Malaysian education context, the digital divide still exists, especially in rural areas which will affect to the effectiveness of technology-based instruction: the integrating metaverse technologies or platform into language teaching example internet connection, and infrastructure (Shamsudin et al., 2023). However, it is also similar to Samboteng & Kasmad (2024) in mentioned the quality of online learning experiences was influenced by infrastructure inequality which will restrict the scalability of new technologies examples like metaverse platform.

So, all those challenges have highlighted the needs for comprehensive strategies to bridge and overcome the digital divide that emerge in the used of this technology.

Moreover, the strategies that can be adopted to overcome those challenges in ensuring the effectiveness of T&L process. Firstly, basic training is required on the use of the platform for both lecturers and students on prior to implementation give both prepare on the use on it. According to research by Nayan et al. (2024), the successful implementation of immersive technologies in learning very depends on the pedagogical support and user readiness. Therefore, lecturers should design the language activities that are appropriate based on students' learning level and their learning styles. Next, institutional support of infrastructure provision and continuous training is also essential to ensure the effectiveness of implementation Gather Town platform that can be fully utilized in T&L process.

So, with systematic strategies that have been planned, those challenges can be addressed in where the technology can fulfil its potential as an innovative medium for T&L on the National Language A course.

Proposed Pilot Study Design

An empirical of pilot study have been proposed which can systematically review the impact of Gather Town platform as a metaverse-based learning for language learning- National Language A course in higher education. Quasi-experimental design will also be implemented through pre-test and post-test in order to evaluate students' language proficiency and engagement in metaverse-based learning (Gather Town) through rubrics and engagement scales which can give the measurable outcomes, comparisons of linguistic gains, motivation and digital literacy. The measurement for assessment will build in the range that focus on the four domains of language skills (listening, writing, reading and speaking). Based on research has indicated immersive learning environment have the potential in fostering students' active participation indirectly enhance their language proficiency through experiential interaction such as through avatar interaction (Shadiev, Wang & Shen, 2025).

CONCLUSION

The integration of Gather Town platform in the National Language A course show a significant potential in enhancing students' language skills on Malay language through an interactive and student-centered learning environment. The features like collaborative virtual classrooms, real-life scenario simulations, and gamification support that bring by integration of metaverse in learning could strengthen students' digital literacy and grasp the skills that been deliver in the meaningful ways. So, this innovation not only fosters students' confidence on communication, and 21st-century skills but also aligns with higher education transformation agenda that align with IR 4.0. Overall, the use of metaverse platform in language teaching based on this concept paper serve as a reference or guide to integrate immersive platform across other courses and disciplines in higher education institutions, especially for language education that always been label as unimportant and bored course by students nowadays.

Appreciation

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